Business Intelligence Analyst Test Case

Introduction

Below are two sample business problems in the candidate assessment process for the role of Business Intelligence Analyst at TourRadar. The purpose of these tasks is for us to get a more rigorous preliminary assessment of your approach to problem solving, technical capabilities and communication skills.

The exercises should take no more than a couple of hours each as we are just looking to understand how you would tackle these problems and how you would communicate findings. We are not looking for a rigorous and comprehensive white paper into every consideration of these problems. You can use any tools you'd like, but we would ask you to create a report for each of these problems in one of the widely used formats (pdf, html, google documents etc), so we don't need to install or run any specific tools to check the results.

In each exercise, we have provided you with a dataset and asked you to perform some analytical tasks on them.

Output

We are interested in seeing three outputs from your work.

1. An explanation of your approach
    a. Any initial/high-level observations of the dataset that we've shared
    b. Which analytical methods have you considered applying and why
2. Any code (eg. Python, SQL, R) that you've used in processing/analysing the data
3. Final output
    a. The executive summary of your findings. Imagine that you would be presenting this to the management team and you need to concisely communicate the 3-5 most important insights from your analysis that could influence strategic decision making.
    b. Any charts, tables or summarised outputs that support your conclusions above
    c. Your next steps if you had more time and resources (different analytical methods, more data etc)

Challenge #1: Analyzing Experiment Results

We have provided you with a dataset [ab_test_analysis.tsv] of the results of an A/B test performed on the TourRadar platform in October 2017. The purpose of this experiment was to detect how adding a search bar to the website homepage affects user behaviour and conversion rates. The dataset consists of 2,430 observations and includes the following fields:

dimensions:	
`date`	date of the observation
`version`	version of the page: 0 = original homepage without a search bar, 1 = homepage with a search bar only, 2 = homepage with a search bar and a banner
`location`	location of the visitor
`device`	device type of the visitor
`browser`	visitor's browser name
metrics:	
`visits`	the number of unique visits on this particular version of a homepage
`bounce_rate`	bounce rate (the percentage of single-page sessions in which there was no interaction with the page)
`time_on_page`	the average amount of time (in seconds) users spent viewing a specified version of a homepage
`conversions`	the number of bookings

We would like you to use this dataset to analyse these outputs of the experiment and provide recommendations to TourRadar management on which version of the homepage should be used and why.

Challenge #2: Report

We have provided you with a dataset [analytics_data.txt] which includes the randomized historical data of TourRadar's website performance from Google Analytics. The dataset includes 623,076 observations and includes the following fields:

dimensions:	
`date`	date of the observation
`path`	URL of the visit (only tour detail pages are included)

metrics:	
`sessions`	the number of the sessions
`bounces`	the number of bounces
`time_on_page`	the average amount of time (in seconds) users spent viewing a specified page
`transactions`	the number of bookings

We would like you to use this dataset to create a report for the management team with which they are able to understand the data (traffic, transactions, onsite behavior, etc.) and present it to the board members.